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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/777,553	02/05/2001	Michel G. M. Perbost	10981072-2	8566

7590 10/03/2002
AGILENT TECHNOLOGIES
Legal Department, 51UPD
Intellectual Property Administration
P. O. Box 58043
Santa Clara, CA 95052-8043

EXAMINER

FORMAN, BETTY J

ART UNIT	PAPER NUMBER
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1634

DATE MAILED: 10/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/777,553

Applicant(s)

PERBOST ET AL.

Examiner

BJ Forman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-36 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Applicant has not complied with one or more conditions for receiving the benefit of an earlier filing date under 35 U.S.C. 120 as follows:

An application in which the benefits of an earlier application are desired must contain a specific reference to the prior application(s) in the first sentence of the specification or in an application data sheet (37 CFR 1.78(a)(2) and (a)(5)).

Preliminary Amendment

2. Applicant's Preliminary Amendment submitted 5 February 2001 in Paper No. 5 is acknowledged. The amendments have been entered.

Claims 21-36 are currently pending.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claims 24 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claims 24 and 25 are each indefinite for the recitation "each cell of the high-density array" because the recitation lacks proper antecedent basis in Claims 23 and 21. It is suggested that the claims be amended to provide proper antecedent basis.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 21-23 and 30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Weiler et al (Analytical Biochemistry, 1996, 243: 218-227).

Regarding Claim 21, Weiler et al disclose the method used during the solid-state synthesis of surface-bound polymers at different locations on a solid substrate to form an array the method comprising: selecting a reactive wash solution that is not reactive toward any nascent polymers bound to the solid substrate but that reacts with and deactivates the reactive reagents and that is miscible with the reaction solution, and applying the reactive solution to the surface of the solid substrate in order to react with and deactivate any unreacted reactive reagents (page 220, left column, first full paragraph; page 222, Table 1 and right column-page 223).

Regarding Claim 22, Weiler et al disclose the method wherein the reaction solution includes reactive monomers and catalyzing reagent that catalyzes the coupling of reactive

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monomers to the nascent polymers (page 220, left column, first full paragraph; page 222, Fig. 4 and Table 1 and right column through page 223).

Regarding Claim 23, Weiler et al disclose the method wherein the reactive monomers are deoxynucleoside phosphoramidites and the polymers are oligonucleotides (Abstract and page 219, left column, first full paragraph).

Regarding Claim 30, Weiler et al disclose a method of fabricating an array of polymers located at features of the array, the method comprising: coupling a reactive monomer to a nascent polymer bound to the surface of a solid substrate comprising: applying monomer molecules and reagent required to catalyze the coupling of the monomer with the nascent polymer and applying a reactive wash solution to the surface of the solid substrate to react with and deactivate any remaining reactive monomers on the surface of the substrate (Abstract, page 220, left column, first full paragraph; page 222, Table 1 and right column-page 223 and Fig. 6).

Regarding Claim 31, Weiler et al disclose the method wherein the reactive monomers are deoxynucleoside phosphoramidites and the polymers are oligonucleotides (Abstract and page 219, left column, first full paragraph).

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground

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provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 21-36 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-15 of U.S. Patent No. 6,184,347. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to methods comprising steps of coupling, selecting and applying reactive wash solutions to the surface of a solid substrate to react with and deactivate any unreacted reactive reagents and differ only in the patent claims reciting the limitation of "removing the reaction solution from the surface". However, instant depended Claims 24-25 and 32-34 recite the above limitations. Additionally, the open claim language "comprising" recited in the instant claims encompass the additional step of removing recited in the patent claims. In addition the above issues, it would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to remove reactive solution from the substrate to thereby wash the surface of excess reagents and prepare the surface for subsequent applications e.g. monomer addition and/or polymer assays.

9. Claims 30-36 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-19 of U.S. Patent No. 6,300,137. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to methods comprising steps of coupling, selecting and applying reactive wash solutions to the surface of a solid substrate to react with and deactivate any unreacted reactive reagents and differ only in the patent claims recite additional steps of capping unreacted groups and repeatedly applying solutions. However, the instant

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claims are drawn to the similar method comprising coupling and applying wherein the open claim language "comprising" encompasses the additional patent method steps. As such, the instantly broadly claimed methods are a genus of the patent claims. The courts have stated that a genus is obvious in view of the teaching of a species see *Slayter*, 276 F.2d 408, 411, 125 USPQ 345, 347 (CCPA 1960); and *In re Gosteli*, 872 F.2d 1008, 10 USPQ2d 1614 (Fed. Cir. 1989). Therefore the instantly claimed method comprising coupling and applying (i.e. genus) is obvious in view of the patent method comprising coupling, capping, applying and repeating (i.e. species).

10. Claims 21-36 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 4-24 of U.S. Patent No. 6,451,998. Although the conflicting claims are not identical, they are not patentably distinct from each other because both sets of claims are drawn to methods of polymer synthesis and polymer array synthesis comprising steps of coupling, selecting and applying solutions to the surface of a solid substrate and differ only in the patent claims recite additional steps of capping uncoupled moieties and oxidizing. However, the instant claims are drawn to the similar method comprising coupling and applying wherein the open claim language "comprising" encompasses the additional patent method steps. As such, the instantly broadly claimed methods are a genus of the patent claims. The courts have stated that a genus is obvious in view of the teaching of a species see *Slayter*, 276 F.2d 408, 411, 125 USPQ 345, 347 (CCPA 1960); and *In re Gosteli*, 872 F.2d 1008, 10 USPQ2d 1614 (Fed. Cir. 1989). Therefore the instantly claimed method comprising coupling and applying (i.e. genus) is obvious in view of the patent method comprising coupling, capping, applying and oxidizing (i.e. species).

Prior Art

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

McGall et al (U.S. Patent No. 6,147,205, filed 5 March 1997) teach solid-state synthesis of surface-bound polymers at different locations on a solid substrate to form an array the method comprising: a reactive wash solution (i.e. methanol) (Column 2, line 53-Column 3, line 19 and Column 8, lines 56-65).

Hirschbein et al (U.S. Patent No. 5,824,793, issued 20 October 1998) teach solid-state synthesis of surface-bound polymers comprising: selecting a reactive wash solution that reacts with and deactivates the reactive reagents (i.e. methanol), and applying the reactive solution to the surface of the solid substrate in order to react with and deactivate any unreacted reactive reagents (Column 9, lines 20-46, Column 12, lines 8-20; and Example 7, Column 29, lines 45-61).

Conclusion

12. No claim is allowed.

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BJ Forman whose telephone number is (703) 306-5878. The examiner can normally be reached on 6:30 TO 4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones can be reached on (703) 308-1152. The fax phone numbers for the organization where this


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application or proceeding is assigned are (703) 308-4242 for regular communications and (703) 308-8724 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0196.


BJ Forman, Ph.D.
Patent Examiner
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September 26, 2002